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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,044	11/13/2001	Kiyonori Yokoi	33035WC0231	6359

7590

05/16/2003

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EXAMINER

NGUYEN, CHAU N

ART UNIT

PAPER NUMBER

2831

DATE MAILED: 05/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/987,044

Applicant(s)

YOKOI ET AL.

Examiner

Chau N Nguyen

Art Unit

2831

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-22 and 24-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-22 and 24-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 2, 10, 12, 14-16, 19-22 and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsumata et al. (5,171,938) in view of Wessels et al. (5,614,319), Harada (5,118,905) and Mori (4,638,114).

Katsumata et al. discloses a coaxial element wire (fig. 7a) comprising a center conductor (111), a non-electrically conductive insulation layer (112) provided around the center conductor and in contact therewith, and an outer conductor (113) wherein the outer conductor is a ribbon-shaped conductor of a virtually rectangular cross-section, made out of copper (col. 7, line 38), helically wrapped around the insulation layer with one long side thereof facing the insulation layer, and has its four corners smoothed. Katsumata et al. also discloses the coaxial element wire being provided with a jacket (115) to form a coaxial cable.

Katsumata et al. does not specifically disclose the thickness of the insulation layer being 0.03 mm to 0.15 mm at a portion of the insulation layer where the thickness is smallest, the outer conductor obtained by pressing a round wire into a flat form, without annealing after pressing, nor the wrapping angle of the ribbon-shaped conductor with respect to an axis of the coaxial element wire being 45 degrees or more.

Wessels et al. discloses a cable comprising an insulation layer having a thickness of less than 0.15 mm (col. 7, lines 47-49). It would have been obvious to one skilled in the art to provide the insulation of Katsumata et al. with a thickness

of less than 0.15 mm as taught by Wessels et al. to provide a flexibility for the cable.

Harada discloses a coaxial cable comprising an outer conductor which is formed by a plurality of ribbon-shaped conductors. Harada discloses that the ribbon-shaped conductor is obtained by pressing a round wire into a ribbon-shaped wire. It would have been obvious to one skilled in the art to use a ribbon-shaped conductor which is formed by pressing a round wire for the ribbon-shaped conductor of Katsumata since a ribbon-shaped conductor formed from pressing a round wire would provide smooth corners as taught by Harada.

Although not disclosed by the references, it is well-known in the art that annealing a metal is to increase the hardness of the metal, and the ribbon-shaped conductor of Katsumata or Harada is used for either helical winding or braiding. Therefore, annealing the conductor after pressing would make the conductor harder which would be difficult for winding or braiding the conductor. Accordingly, it would have been obvious to one skilled in the art to not annealing the ribbon-shaped conductor, after pressing, in the modified Katsumata cable to ease the step of helically winding the conductor around the insulation.

Katsumata discloses that a plurality of the ribbon-shaped conductors can be used, in such case the conductors can be wound in parallel (the same direction) to each other or in intersecting relation (opposite direction) (col. 6, lines 53-56).

Mori discloses a coaxial cable comprising an outer conductor which is wrapped with an angle of 45° or more with respect to the axis of the wire. It would have been obvious to one skilled in the art to wrap the outer conductor of Katsumata et al. with an angle of 45° or more with respect to the axis of the wire as taught by Mori to provide a desired capacitance for the cable (re claims 2 and 22).

Re claims 2, 16 and 22, Mori discloses that the capacitance of the cable depends upon the tension and the angle of the wrapped conductor. Therefore, it would have been obvious to one skilled in the art to choose suitable tension, including 30% or more of tensile strength of the ribbon-shaped conductor, for the outer conductor of Katsumata et al. to meet the specific use of the resulting cable since it is taught by Mori that the capacitance of the cable depends upon the tension and the angle of the wrapped conductor.

Re claim 30, it would have been obvious to one skilled in the art to use PFA for the insulation layer of Katsumata since PFA is known in the art for being used as electrical insulation material and being known for its excellent flame retardancy.

4. Claims 4, 6, 17, 24 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsumata et al. in view of Wessels et al., Harada and Mori as applied to claims 1, 16 and 22 above, and further in view of Sass (4,552,989).

Sass discloses a cable comprising a plurality of coaxial cables being twisted together and a jacket. It would have been obvious to one skilled in the art to use a plurality of the modified coaxial cables of Katsumata et al. to form a multi coaxial cable as taught by Sass for multiple transmitting purposes.

5. Claims 5, 7 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsumata et al. in view of Wessels et al., Harada, Mori and Sass as applied to claims 4 and 17 above, and further in view of Ijff et al. (4,358,636).

Ijff et al. discloses a multiple coaxial cable comprising a plurality of coaxial cables wherein the outer conductors of the coaxial cables are in contact. Ijff et al. also discloses coaxial cables being disposed at a position where the cables are subjected to bending (col. 1). It would have been obvious to one skilled in the art to contact the outer conductors of the coaxial cables in the modified Katsumata et al. cable together (a plurality of coaxial wires without the jacket 115 being bundled together) so that optimum signal transmission is realized as taught by Ijff et al. It

would also have been obvious to one skilled in the art to use the modified cable of Katsumata et al. at a position where the cables are subjected to bending since the modified cable of Katsumata et al. is flexible.

6. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsumata et al. in view of Wessels et al., Harada and Mori as applied to claims 1 and 2 above, and further in view of Martin (3,334,177).

Martin discloses a cable comprising an outer conductor (12) being spirally wrapped (helically wrapped) with adjacent wrappings of the outer conductor butt against one another. It would have been obvious to one skilled in the art to modify the outer conductor of Katsumata such that the spiral or the helical adjacent wrappings of the outer conductor butt against one another as taught by Martin to improve the shielding effect for the cable.

7. Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsumata et al. in view of Wessels et al., Harada and Mori as applied to claims 10 and 12 above, and further in view of Peterson (5,354,954).

Peterson discloses a cable comprising two ribbon-shaped conductors (18,20) helically wrapped on an insulation core (16) wherein the second ribbon-shaped

conductor overlaps the first ribbon-shaped conductor (Figs 2 and 3). It would have been obvious to one skilled in the art that in the case two (a plurality) of ribbon-shaped conductors are used in the Katsumata cable, to provide the two conductors in the same direction and to provide the second conductor overlapping the first conductor as taught by Peterson. With this modification, the frictionally induced fracture and failure in the cable is greatly reduced (col. 4, lines 46-49).

Response to Arguments

8. Applicant's arguments with respect to claims 1 and 16 have been considered but are moot in view of the new ground(s) of rejection except for the following.

Applicant argues that Katsumata discloses a non-electrically conductive insulation layer (112) provided around the center conductor (111), and an electrically-conductive shield layer (114) for an outer conductor. Unlike claims 1, 2, 16 and 22, Katsumata does not disclose the structure where the cables require a non-electrically conductive insulation layer provided around the outer conductor. This argument is not found persuasive because claims 1, 2, 16 and 22 **recite a non-electrically conductive insulation layer provided around the inner conductor** and not the outer conductor, and such feature is disclosed by Katsumata. However, if it was cited in the claims that a non-electrically conductive insulation layer is

provided around the outer conductor, Katsumata discloses a non-electrically conductive insulation layer (115) provided around the outer conductor (113).

Applicant also argues that claims 1, 2, 16 and 22 do not describe the structure including an electrical shield layer around an outer conductor. In response, applicant uses the transitional term "comprising" in claims 1, 2, 16 and 22, which is open-ended and does not exclude additional elements. In re Baxter, 656 F.2d 679, 210 USPQ 795, 803 ("comprising" leaves "the claim open for the inclusion of unspecified ingredients even in major amount).

Applicant further argues that the combination of the tape-shaped outer conductor wound tightly using a short pitch (wrapping angle of 45 degrees or more) prevents the generation of static electricity. Katsumata does not teach a wrapping angle of a ribbon-shaped conductor with respect to an axis of a coaxial element wire being 45 degrees or more as disclosed in the claimed invention. It is true that Katsumata does not teach a wrapping angle of a ribbon-shaped conductor with respect to an axis of a coaxial element wire being 45 degrees or more as disclosed in the claimed invention. However, the modified Katsumata cable (using the teaching of Mori) does disclose a wrapping angle of a ribbon-shaped conductor with respect to an axis of a coaxial element wire being 45 degrees or more as disclosed in the claimed invention. Furthermore, the modified cable of Katsumata

is capable of preventing the generation of static electricity since the modified cable of Katsumata comprises structure and material as claimed.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine is found in the references themselves, see the above rejection.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chau N Nguyen whose telephone number is 308-0693. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on (703) 308 3682. The fax phone numbers for the organization where this application or proceeding is

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assigned are (703) 305 3432 for regular communications and (703) 305 1341 for
After Final communications.

Any inquiry of a general nature or relating to the status of this application or
proceeding should be directed to the receptionist whose telephone number is (703)
308-0956.



Chau N Nguyen
Primary Examiner
Art Unit 2831

CN
May 13, 2003